

Patent

Customer No. 31561  
Attorney Docket No. 11514-US-PA  
Application No.: 10/710,637

IPW

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Applicant : Chang  
Application No. : 10/710,637  
Filed : 2004/7/27  
For : OVERLAY MARK AND METHOD OF FABRICATING  
THE SAME  
Examiner : N/A  
Art Unit : 2812

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**REQUEST FOR CORRECTING FILING RECEIPT**

**VIA Courier**

ASSISTANT COMMISSIONER FOR PATENTS  
Arlington, VA22202

Dear Sir:

A filing receipt for the above-identified application was received with thanks.

It is noted, however, that no data are printed under the item of Foreign Application in the filing receipt. Please be advised that the subject application purported to claim the priority benefit of Taiwan application serial no. 92127630, filed on October 6, 2003. However, this claim was not properly marked in the *e-pave* system, which may have led to the omission of the said priority data in the filing receipt for the subject application. Still, your attention is now kindly directed to two documents associated with the subject application in which this claim for the priority benefit of the said Taiwan application is believed duly made.

Firstly, in the combined declaration and power of attorney submitted concurrently with the filing of the subject application on July 27, 2004, Applicant has clearly indicated his intention to claim the priority benefit of the Taiwan application serial number 92127630. Further, in the filed specification for the subject application, the relation of the subject application and the said Taiwan application was disclosed in paragraph [0001] as well. A copy of the said combined declaration and power of attorney and the first page of the filed specification are attached herewith for your reference.

Applicant hereby respectfully solicits your formal recordation of the said priority data and requests a corrected filing receipt reflecting the change in your record concerning the subject application.

Enclosed please also find the following documents:

1. A copy of the filing receipt with the change noted thereon per request of the Office
2. A certified copy of the Taiwan Application No.: 92127630, filed on: 2003/10/6;
3. A prepaid return postcard.

I believe that no fee is incurred. However, the Commissioner is authorized to charge any fees required in connection with the filing of this paper to account No. 50-2620 (Order No.: 11514-US-PA).

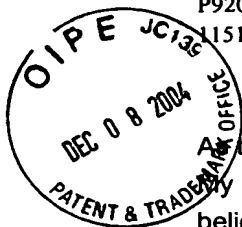
Thank you for your assistance in the subject matter. If you have any questions, please feel free to contact me.

Respectfully Submitted,  
JIANQ CHYUN Intellectual Property Office

Date: Dec. 6, 2004

By: Belinda Lee  
Belinda Lee  
Registration No.: 46,863

**Please send future correspondence to:**  
**7F.-1, No. 100, Roosevelt Rd.,**  
**Sec. 2, Taipei 100, Taiwan, R.O.C.**  
**Tel: 886-2-2369 2800**  
**Fax: 886-2-2369 7233 / 886-2-2369 7234**  
**E-MAIL: BELINDA@JCIPGroup.com.tw; USA@JCIPGroup.com.tw**



## COMBINED DECLARATION AND POWER OF ATTORNEY

As the below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name and that I believe I am an original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

### OVERLAY MARK AND METHOD OF FABRICATING THE SAME

the specification of which

X  is attached hereto.

\_\_\_\_\_ was filed on \_\_\_\_\_

as Application Serial No. \_\_\_\_\_ and was amended on \_\_\_\_\_.

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s):

Number	Country	Date Filed(yyyy/mm/dd)	Yes	No
92127630	Taiwan, R.O.C.	2003/10/06	X	

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

**Belinda Lee** (Reg. No. 46,863)

**Charles Liu** (Reg. No. 53,226)

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SEND CORRESPONDENCE TO:

DIRECT TELEPHONE CALLS TO:

(Name and Telephone Number)

JIANQ CHYUN Intellectual Property Office  
7F.-1, No. 100, Roosevelt Rd., Sec. 2,  
Taipei 100, Taiwan, R.O.C.

**Belinda Lee**

TEL: 886-2-2369 2800

FAX: 886-2-2369 7233

E-mail: [Belinda@JCIPGroup.com.tw](mailto:Belinda@JCIPGroup.com.tw) ; [USA@JCIPGroup.com.tw](mailto:USA@JCIPGroup.com.tw)

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COMBINED DECLARATION AND POWER OF ATTORNEY CONTINUED

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.

Signature: Ching-Yu Chang Date: 10-27 2003

Sole or First Joint Inventor: Ching-Yu Chang

Citizenship: Taiwan, R.O.C.

Residence and Post Office Address: No. 17, 6 Lin, Hsin-Cheng Rd., Tung-Le Tsun, Yuan-Shan  
Hsiang, Yilan Hsien, Taiwan, R.O.C.

Electronic Version

Stylesheet Version v1.1.1



## Description

### [OVERLAY MARK AND METHOD OF FABRICATING THE SAME]

#### CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the priority benefit of Taiwan application serial no. 92127630, filed October 6, 2003.

#### BACKGROUND OF INVENTION

[0002] Field of the Invention

[0003] The invention relates to an overlay mark and a method of fabricating the same, capable of solving the problem of alignment measurement caused by low step height of the outer mark.

[0004] Description of the Related Art

[0005] In addition to the control of critical dimension (CD), factors for a successful photolithography process on a wafer include alignment accuracy (AA). Therefore, the measurement of accuracy, that is, the measurement of overlay error is crucial to the semiconductor fabrication process. An overlay mark is used as a tool for measuring overlay error and to determine whether the photoresist pattern is precisely aligned with the previous wafer layer on a wafer after a photolithography process.

[0006] Conventionally, the overlay marks are located on the corners of the edge of each chip to measure whether the photoresist pattern is aligned with the previous wafer layer in the fabrication process.

[0007] Figures 1A to 1C are cross sectional views illustrating a method of fabricating a metal interconnect having a via (via 0) and an overlay mark. Referring to Figure 1, a substrate 100 is provided, wherein the substrate 100 includes a chip region 102 and an overlay mark region 104. The dielectric layer 106a is formed on the substrate 100, and then the dielectric layer 106a is patterned to form a contact hole 108 in the



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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/710,637	07/27/2004	2812	910	11514-US-PA	11	23	4

31561  
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE  
7 FLOOR-1, NO. 100  
ROOSEVELT ROAD, SECTION 2  
TAIPEI, 100  
TAIWAN

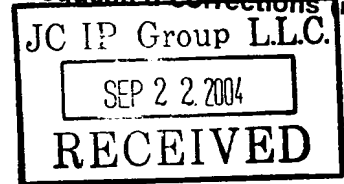
CONFIRMATION NO. 4636  
FILING RECEIPT  
\*OC000000013746043\*

Date Mailed: 09/08/2004

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections, facsimile number 703-746-9195. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections if appropriate).

**Applicant(s)**

Ching-Yu Chang, Yilan Hsien, TAIWAN;



**Power of Attorney:** The patent practitioners associated with Customer Number 31561.

**Domestic Priority data as claimed by applicant**

**Foreign Applications**

↓ TAIWAN 92127630 10/06/2003

**If Required, Foreign Filing License Granted:** 09/07/2004

**The number of your priority application, to be used for filing abroad under the Paris Convention is,**  
**US10/710,637**

**Projected Publication Date:** 02/02/2006

**Non-Publication Request:** No

**Early Publication Request:** No

**Title**